

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)



Applicant's or agent's file reference PE597	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IB 03/03386	International filing date (day/month/year) 23.07.2003	Priority date (day/month/year) 01.08.2002
International Patent Classification (IPC) or both national classification and IPC B67D5/02		
Applicant CPS COLOR EQUIPMENT S.P.A. et al.		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 4 sheets.

- This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 01.03.2004	Date of completion of this report 05.11.2004
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International application No. **PCT/IB 03/03386**

I. Basis of the report

1. With regard to the elements of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-10 as originally filed
1a filed with telefax on 03.08.2004

Claims, Numbers

1-12 filed with telefax on 03.08.2004

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12
	No: Claims	
Inventive step (IS)	Yes: Claims	3-9
	No: Claims	1, 2, 10-12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1: US 4 886 189

1. The subject-matter of claim 1 does not meet the criteria of inventive step as it is laid down in Article 33(3) PCT.
- 1.1 Document D1, which is considered to represent the most relevant state of the art (the reference numbers in parentheses are referring to that document), discloses a dispensing unit for fluids, comprising pump means (13, 15) including a variable volume chamber (39) with at least one flexible wall (43), the pump means (13, 15) communicating with an outlet duct (63) for dispensing the fluids whereby the fluid circuit comprises a one-way valve (65) mounted in the outlet duct (see D1, fig. 1 and 2; col 1, lines 17-26 and col. 4, lines 9-22).
Thus, the subject-matter of claim 1 differs in that a second valve is mounted in series in the outlet duct whereby said valve is the actual delivery valve (see description page 2, lines 19-20).

During handling hazardous liquids, one is confronted with the problem:

- to avoid any contact of the person with the liquid when performing any cleaning or maintenance operations of the liquid dispenser and
- to minimize the quantity of spilled liquid in case the dispensing nozzle or any other apparatus in the dispensing line has to be cleaned or replaced for maintenance reasons. That means that as much liquid as possible should be retained in the system during the above described operations.

The most obvious solution to the above problems for the skilled person is to realize an arrangement of two valves mounted in series in the outlet duct. This approach is common to those skilled in the art and therefore regarded as a normal design procedure not needing any inventive skill.

Hence, the subject-matter of claim 1 does not involve an inventive step and

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therefore does not satisfy the criterion set forth in Article 33(3) PCT.

- 1.2 The same applies to the subject-matter of claims 2 and 10-12 since D1 clearly discloses a bellows pump. Obviously, a part of the output duct has to be formed inside the main body of the pump, because it must communicate with the variable-volume-chamber. In order to dispense the liquid from said chamber, also a delivery circuit (mainly an output duct) has to extend partially outside the pump's main body. Furthermore, D1 also discloses measuring means allowing the deduction of the actual amount of liquid in the container, and therefore allowing the control of the quantity of liquid to be dispensed (see D1, col. 5, lines 19-23).
2. The subject-matter of claim 3 is neither anticipated by the prior art nor derivable from the prior art. Therefore, it is considered as satisfying the criteria of novelty and inventive step as laid down in Article 33(2) and (3) PCT.
3. Also the subject-matter of claims 4-9 complies with said Articles of Novelty and Inventive step of the PCT, because the respective claims are dependent on claim 3.
4. According to the PCT-Guidelines PCT/GL/ISPE 5.23, commencing with such words as "Apparatus for..." is construed as meaning merely apparatus for carrying out the process. Therefore, said formulation has no limiting effect.

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ART 34 AMDE

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CLAIMS

1. A dispensing circuit for fluids, in particular, dyes, inks, paints and the like, comprising pump means (12) including a variable-volume chamber (66) with at least one flexible wall, the pump means (12) communicating with an output duct (16, 72) for dispensing the fluids, characterized in that the circuit comprises two one-way valves (14, 94) mounted in series in the output duct (16, 72).

2. A dispensing circuit according to Claim 1, in which the pump means (12) comprise a main body (64) which delimits the variable-volume chamber (66) at least partially, characterized in that the output duct (16, 72) is formed partially inside the main body (64) and extends partially outside it, at least one of the two one-way valves (14, 94) being mounted in the output duct (16) outside the main body (64).

3. A dispensing circuit according to Claim 2, characterized in that the at least one of the two one-way valves (14, 94) that is mounted in the output duct comprises a hollow body (32), a closure member (52) mounted movably inside the hollow body (32), the closure member (52) comprising a flat abutment surface (54), an abutment inside the hollow body comprising the ridge of a knife-edged element (48a) shaped for bearing against the flat abutment (54), and resilient means (56) associated with the closure member (52) for pressing it against the knife-edged element (48a).

4. A dispensing circuit according to Claims 1 to 3, characterized in that a filter (44) is mounted externally upstream of the at least one of the two one-way valves (14, 94).

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5. A dispensing circuit according to Claim 3, characterized in that at least one of the two one-way valves (14, 94) that are mounted in the output duct (16, 72) comprises a filter.

6. A dispensing circuit according to Claim 3, characterized in that the at least one of the two one-way valves (14, 94) that is mounted in the output duct (16, 72) comprises resilient sealing means (63) interposed between the flat abutment surface (54) and the ridge of the knife-edged element (48a).

7. A dispensing circuit according to Claims 1 to 3, characterized in that the variable-volume chamber (66) also communicates with an inlet duct (70), a one-way valve (74) which is partially open in the rest position being mounted in the inlet duct.

8. A dispensing circuit according to Claim 7, characterized in that the one-way valve (74) that is mounted in the inlet duct (70) has a travel which is different from the travel of at least one of the two one-way valves (14, 94) that are mounted in the output duct (16, 72).

9. A dispensing circuit according to Claim 7, characterized in that each of the two one-way valves (14, 94) that are mounted in the output duct (16, 72) and the one-way valve (74) that is mounted in the inlet duct (70) comprises a hollow body (70, 72, 88), a closure member (76) mounted movably inside the hollow body (70, 72, 88), the closure member (76) comprising a flat abutment surface (54), an abutment inside the hollow body comprising the ridge of a knife-edged element (48a) shaped for bearing against the flat abutment surface (54), and resilient means mounted between the closure member and the hollow body.

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10. A dispensing circuit according to any one of the preceding claims, characterized in that the pump means (12) comprise a bellows pump (66).

11. A machine for dispensing fluid products, in particular, dyes, inks, paints and the like, comprising at least one reservoir (102) of products to be dispensed and at least one delivery nozzle (104), characterized in that it comprises at least one dispensing circuit (10) according to any one of the preceding claims, the output duct (16, 72) and the inlet duct (70) being connected to the at least one nozzle (104) and to the at least one reservoir (102), respectively.

12. A dispensing machine according to Claim 11, characterized in that it comprises a control system (106) for controlling the pump means (12) so as to deliver a predetermined quantity of fluid.